

10/586229

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SEQUENCE LISTING

<110> VOLLMERS, Heinz Peter
 MUELLER-HERMELINK, Hans Konrad
 HENSEL, Frank

<120> Neoplasm-Specific Polypeptides and Their
 Uses

<130> 50274/021003

<150> PCT/US05/02480

<151> 2005-01-26

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 Arg Ser Ser Gln Ser Ile Val His Ser Asn Gly Asn Thr Tyr Leu Glu
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 Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Lys
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Ala Ile Gly Val Thr His Phe Gln Leu Val Gln Met Lys Asp Phe Arg	
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Phe Ser Tyr Lys Phe Lys Met Ala Cys Lys Glu Asp Val Leu Lys Leu	
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Ile	Gln	Thr	Ala	Cys	Lys	His	Ile	Arg	Ser	Gly	Asp	Pro	Met	Ile Leu
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Ser	Cys	Leu	Met	Glu	His	Leu	Tyr	Thr	Glu	Lys	Met	Val	Glu	Asp Cys
														400
Glu	His	Arg	Leu	Leu	Glu	Leu	Gln	Tyr	Phe	Ile	Ser	Arg	Asp	Trp Lys
				405					410					415
Leu	Asp	Pro	Val	Leu	Tyr	Arg	Lys	Cys	Gln	Gly	Asp	Ala	Ser	Arg Leu
				420					425				430	
Cys	His	Thr	His	Gly	Trp	Asn	Glu	Thr	Ser	Glu	Phe	Met	Pro	Gln Gly
				435					440				445	
Ala	Val	Phe	Ser	Cys	Leu	Tyr	Arg	His	Ala	Tyr	Arg	Thr	Glu	Glu Gln
														460
Gly	Arg	Arg	Leu	Ser	Arg	Glu	Cys	Arg	Ala	Glu	Val	Gln	Arg	Ile Leu
														480
His	Gln	Arg	Ala	Met	Asp	Val	Lys	Leu	Asp	Pro	Ala	Leu	Gln	Asp Lys
				485					490					495
Cys	Leu	Ile	Asp	Leu	Gly	Lys	Trp	Cys	Ser	Glu	Lys	Thr	Glu	Thr Gly
				500					505				510	
Gln	Lys	Leu	Glu	Cys	Leu	Gln	Asp	His	Leu	Asp	Asp	Leu	Val	Val Glu
				515					520				525	
Cys	Arg	Asp	Ile	Val	Gly	Asn	Leu	Thr	Glu	Leu	Glu	Ser	Glu	Asp Ile
				530									540	
Gln	Ile	Glu	Ala	Leu	Leu	Met	Arg	Ala	Cys	Glu	Pro	Ile	Ile	Gln Asn
														560
Phe	Cys	His	Asp	Val	Ala	Asp	Asn	Gln	Ile	Asp	Ser	Gly	Asp	Leu Met
				565					570					575
Glu	Cys	Leu	Ile	Gln	Asn	Lys	His	Gln	Lys	Asp	Met	Asn	Glu	Lys Cys
				580					585				590	
Ala	Ile	Gly	Val	Thr	His	Phe	Gln	Leu	Val	Gln	Met	Lys	Asp	Phe Arg
				595									605	
Phe	Ser	Tyr	Lys	Phe	Lys	Met	Ala	Cys	Lys	Glu	Asp	Val	Leu	Lys Leu
														620
Cys	Pro	Asn	Ile	Lys	Lys	Lys	Val	Asp	Val	Val	Ile	Cys	Leu	Ser Thr
														640
Thr	Val	Arg	Asn	Asp	Thr	Leu	Gln	Glu	Ala	Lys	Glu	His	Arg	Val Ser
				645					650					655
Leu	Lys	Cys	Arg	Arg	Gln	Leu	Arg	Val	Glu	Glu	Leu	Glu	Met	Thr Glu
				660					665					670
Asp	Ile	Arg	Leu	Glu	Pro	Asp	Leu	Tyr	Glu	Ala	Cys	Lys	Ser	Asp Ile
				675					680				685	
Lys	Asn	Phe	Cys	Ser	Ala	Val	Gln	Tyr	Gly	Asn	Ala	Gln	Ile	Ile Glu
														700
Cys	Leu	Lys	Glu	Asn	Lys	Lys	Gln	Leu	Ser	Thr	Arg	Cys	His	Gln Lys
														720
Val	Phe	Lys	Leu	Gln	Glu	Thr	Glu	Met	Met	Asp	Pro	Glu	Leu	Asp Tyr
				725					730					735
Thr	Leu	Met	Arg	Val	Cys	Lys	Gln	Met	Ile	Lys	Lys	Phe	Cys	Pro Glu
				740					745				750	
Ala	Asp	Ser	Lys	Thr	Met	Leu	Gln	Cys	Leu	Lys	Gln	Asn	Lys	Asn Ser
				755					760				765	

Glu Leu Met Asp Pro Lys Cys Lys Gln Met Ile Thr Lys Arg Gln Ile
 770 775 780
 Thr Gln Asn Thr Asp Tyr Arg Leu Asn Pro Met Leu Arg Lys Ala Cys
 785 790 795 800
 Lys Ala Asp Ile Pro Lys Phe Cys His Gly Ile Leu Thr Lys Ala Lys
 805 810 815
 Asp Asp Ser Glu Leu Glu Gly Gln Val Ile Ser Cys Leu Lys Leu Arg
 820 825 830
 Tyr Ala Asp Gln Arg Leu Ser Ser Asp Cys Glu Asp Gln Ile Arg Ile
 835 840 845
 Ile Ile Gln Glu Ser Ala Leu Asp Tyr Arg Leu Asp Pro Gln Leu Gln
 850 855 860
 Leu His Cys Ser Asp Glu Ile Ser Ser Leu Cys Ala Glu Glu Ala Ala
 865 870 875 880
 Ala Gln Glu Gln Thr Gly Gln Val Glu Glu Cys Leu Lys Val Asn Leu
 885 890 895
 Leu Lys Ile Lys Thr Glu Leu Cys Lys Lys Glu Val Leu Asn Met Leu
 900 905 910
 Lys Glu Ser Lys Ala Asp Ile Phe Val Asp Pro Val Leu His Thr Ala
 915 920 925
 Cys Ala Leu Asp Ile Lys His His Cys Ala Ala Ile Thr Pro Gly Arg
 930 935 940
 Gly Arg Gln Met Ser Cys Leu Met Glu Ala Leu Glu Asp Lys Arg Val
 945 950 955 960
 Arg Leu Gln Pro Glu Cys Lys Lys Arg Leu Asn Asp Arg Ile Glu Met
 965 970 975
 Trp Ser Tyr Ala Ala Lys Val Ala Pro Ala Asp Gly Phe Ser Asp Leu
 980 985 990
 Ala Met Gln Val Met Thr Ser Pro Ser Lys Asn Tyr Ile Leu Ser Val
 995 1000 1005
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 <213> Homo sapiens

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 35 40 45
 Phe Val Gly Gln Ala Gly Gly Gly Gly Pro Ala Gly Gln Gln Leu Pro
 50 55 60
 Gln Leu Pro Gln Ser Ser Gln Leu Gln Gln Gln Gln Gln Gln Gln
 65 70 75 80
 Gln Gln Gln Gln Pro Gln Pro Pro Gln Pro Pro Phe Pro Ala Gly Gly
 85 90 95
 Pro Pro Arg Arg Gly Gly Ala Gly Ala Gly Gly Gly Trp Lys Leu Ala
 100 105 110
 Glu Glu Glu Ser Cys Arg Glu Asp Val Thr Arg Val Cys Pro Lys His

His	Gly	Trp	Asn	Glu	Thr	Ser	Glu	Phe	Met	Pro	Gln	Gly	Ala	Val	Phe	580	585	590
Ser	Cys	Leu	Tyr	Arg	Glu	Ala	Tyr	Arg	Thr	Glu	Glu	Gln	Gly	Arg	Arg	595	600	605
Leu	Ser	Arg	Glu	Cys	Arg	Ala	Glu	Val	Gln	Arg	Ile	Leu	His	Gln	Arg	610	615	620
Ala	Met	Asp	Val	Lys	Leu	Asp	Pro	Ala	Leu	Gln	Asp	Lys	Cys	Leu	Ile	625	630	635
Asp	Leu	Gly	Lys	Trp	Cys	Ser	Glu	Lys	Thr	Glu	Thr	Gly	Gln	Glu	Leu	645	650	655
Glu	Cys	Leu	Gln	Asp	His	Leu	Asp	Asp	Leu	Val	Val	Glu	Cys	Arg	Asp	660	665	670
Ile	Val	Gly	Asn	Leu	Thr	Glu	Leu	Glu	Ser	Glu	Asp	Ile	Gln	Ile	Glu	675	680	685
Ala	Leu	Leu	Met	Arg	Ala	Cys	Glu	Pro	Ile	Ile	Gln	Thr	Phe	Cys	His	690	695	700
Asp	Ala	Asp	Asn	Gln	Ile	Asp	Ser	Gly	Asp	Leu	Met	Glu	Cys	Leu	Ile	705	710	715
Gln	Asn	Lys	His	Gln	Lys	Asp	Met	Asn	Glu	Lys	Cys	Ala	Ile	Gly	Val	725	730	735
Thr	His	Phe	Gln	Leu	Val	Gln	Met	Lys	Asp	Phe	Arg	Phe	Ser	Tyr	Lys	740	745	750
Phe	Lys	Met	Ala	Cys	Lys	Glu	Asp	Val	Leu	Lys	Leu	Cys	Pro	Asn	Ile	755	760	765
Lys	Lys	Lys	Val	Asp	Val	Val	Ile	Cys	Leu	Ser	Thr	Thr	Val	Arg	Asn	770	775	780
Asp	Thr	Leu	Gln	Glu	Ala	Lys	Glu	His	Arg	Val	Ser	Leu	Lys	Cys	Arg	785	790	795
Arg	Gln	Leu	Arg	Val	Glu	Glu	Leu	Glu	Met	Thr	Glu	Asp	Ile	Arg	Leu	805	810	815
Glu	Pro	Asp	Leu	Tyr	Glu	Ala	Cys	Lys	Ser	Asp	Ile	Lys	Asn	Phe	Cys	820	825	830
Ser	Ala	Val	Gln	Tyr	Gly	Asn	Ala	Gln	Ile	Ile	Glu	Cys	Leu	Lys	Glu	835	840	845
Asn	Lys	Lys	Gln	Leu	Ser	Thr	Arg	Cys	His	Gln	Lys	Val	Phe	Lys	Leu	850	855	860
Gln	Glu	Thr	Glu	Met	Met	Asp	Pro	Glu	Leu	Asp	Tyr	Thr	Leu	Met	Arg	865	870	875
Val	Cys	Lys	Gln	Met	Ile	Lys	Arg	Phe	Cys	Pro	Glu	Ala	Asp	Ser	Lys	885	890	895
Thr	Met	Leu	Gln	Cys	Leu	Lys	Gln	Asn	Lys	Asn	Ser	Glu	Leu	Met	Asp	900	905	910
Pro	Lys	Cys	Lys	Gln	Met	Ile	Thr	Lys	Arg	Gln	Ile	Thr	Gln	Asn	Thr	915	920	925
Asp	Tyr	Arg	Leu	Asn	Pro	Met	Leu	Arg	Lys	Ala	Cys	Lys	Ala	Asp	Ile	930	935	940
Pro	Lys	Phe	Cys	His	Gly	Ile	Leu	Thr	Lys	Ala	Lys	Asp	Asp	Ser	Glu	945	950	955
Leu	Glu	Gly	Gln	Val	Ile	Ser	Cys	Leu	Lys	Leu	Arg	Tyr	Ala	Asp	Gln	965	970	975
Arg	Leu	Ser	Ser	Asp	Cys	Glu	Asp	Gln	Ile	Arg	Ile	Ile	Ile	Gln	Glu	980	985	990
Ser	Ala	Leu	Asp	Tyr	Arg	Leu	Asp	Pro	Gln	Leu	Gln	Leu	His	Cys	Ser	995	1000	1005
Asp	Glu	Ile	Ser	Ser	Leu	Cys	Ala	Glu	Glu	Ala	Ala	Ala	Gln	Glu	Gln	1010	1015	1020
Thr	Gly	Gln	Val	Glu	Glu	Cys	Leu	Lys	Val	Asn	Leu	Leu	Lys	Ile	Lys			

1025 1030 1035 1040
 Thr Glu Leu Cys Lys Lys Glu Val Leu Asn Met Leu Lys Glu Ser Lys
 1045 1050 1055
 Ala Asp Ile Phe Val Asp Pro Val Leu His Thr Ala Cys Ala Leu Asp
 1060 1065 1070
 Ile Lys His His Cys Ala Ala Leu Thr Pro Gly Arg Gly Arg Gln Met
 1075 1080 1085
 Ser Cys Leu Met Glu Ala Leu Glu Asp Lys Arg Val Arg Leu Gln Pro
 1090 1095 1100
 Glu Cys Lys Lys Arg Leu Asn Asp Arg Ile Glu Met Trp Ser Tyr Ala
 1105 1110 1115 1120
 Ala Lys Val Ala Pro Ala Asp Gly Phe Ser Asp Leu Ala Met Gln Val
 1125 1130 1135
 Met Thr Ser Pro Ser Lys Asn Tyr Ile Leu Ser Val Ile Ser Gly Ser
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 Arg Val Thr Arg Glu Leu Lys Asp Arg
 1170 1175

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 35 40 45
 Phe Val Gly Gln Ala Gly Gly Gly Gly Pro Ala Gly Gln Gln Leu Pro
 50 55 60
 Gln Leu Leu Gln Ser Ser Gln Leu Gln Gln Gln Gln Gln Gln Gln
 65 70 75 80
 Gln Gln Gln Gln Leu Gln Pro Pro Gln Pro Pro Phe Pro Ala Gly Gly
 85 90 95
 Pro Pro Ala Arg Arg Gly Gly Ala Gly Ala Gly Gly Gly Trp Lys Leu
 100 105 110
 Ala Glu Glu Glu Ser Cys Arg Glu Asp Val Thr Arg Val Cys Pro Lys
 115 120 125
 His Thr Trp Ser Asn Asn Leu Ala Val Leu Glu Cys Leu Gln Asp Val
 130 135 140
 Arg Glu Pro Glu Asn Glu Ile Ser Ser Asp Cys Asn His Leu Leu Trp
 145 150 155 160
 Asn Tyr Lys Leu Asn Leu Thr Thr Asp Pro Lys Phe Glu Ser Val Ala
 165 170 175
 Arg Glu Val Cys Lys Ser Thr Ile Thr Glu Ile Lys Glu Cys Ala Asp
 180 185 190
 Glu Pro Val Gly Lys Gly Tyr Met Val Ser Cys Leu Val Asp His Arg
 195 200 205
 Gly Asn Ile Thr Glu Tyr Gln Cys His Gln Tyr Ile Thr Lys Met Thr
 210 215 220
 Ala Ile Ile Phe Ser Asp Tyr Arg Leu Ile Cys Gly Phe Met Asp Asp
 225 230 235 240

Cys Lys Asn Asp Ile Asn Ile Leu Lys Cys Gly Ser Ile Arg Leu Gly
245 250 255
Glu Lys Asp Ala His Ser Gln Gly Glu Val Val Ser Cys Leu Glu Lys
260 265 270
Gly Leu Val Lys Glu Ala Glu Glu Arg Glu Pro Lys Ile Gln Val Ser
275 280 285
Glu Leu Cys Lys Lys Ala Ile Leu Arg Val Ala Glu Leu Ser Ser Asp
290 295 300
Asp Phe His Leu Asp Arg His Leu Tyr Phe Ala Cys Arg Asp Asp Arg
305 310 315 320
Glu Arg Phe Cys Glu Asn Thr Gln Ala Arg Glu Gly Arg Val Tyr Lys
325 330 335
Cys Leu Phe Asn His Lys Phe Glu Glu Ser Met Ser Glu Lys Cys Arg
340 345 350
Glu Ala Leu Thr Thr Arg Gln Lys Leu Ile Ala Gln Asp Tyr Lys Val
355 360 365
Ser Tyr Ser Leu Ala Lys Ser Cys Lys Ser Asp Leu Lys Lys Tyr Arg
370 375 380
Cys Asn Val Glu Asn Leu Pro Arg Ser Arg Glu Ala Arg Leu Ser Tyr
385 390 395 400
Leu Leu Met Cys Leu Glu Ser Ala Val His Arg Gly Arg Gln Val Ser
405 410 415
Ser Glu Cys Gln Gly Glu Met Leu Asp Tyr Arg Arg Met Leu Met Glu
420 425 430
Asp Phe Ser Leu Ser Pro Glu Ile Ile Leu Ser Cys Arg Gly Glu Ile
435 440 445
Glu His His Cys Ser Gly Leu His Arg Lys Gly Arg Thr Leu His Cys
450 455 460
Leu Met Lys Val Val Arg Gly Glu Lys Gly Asn Leu Gly Met Asn Cys
465 470 475 480
Gln Gln Ala Leu Gln Thr Leu Ile Gln Glu Thr Asp Pro Gly Ala Asp
485 490 495
Tyr Arg Ile Asp Arg Ala Leu Asn Glu Ala Cys Glu Ser Val Ile Gln
500 505 510
Thr Ala Cys Lys His Ile Arg Ser Gly Asp Pro Met Ile Leu Ser Cys
515 520 525
Leu Met Glu His Leu Tyr Thr Glu Lys Met Val Glu Asp Cys Glu His
530 535 540
Arg Leu Leu Glu Leu Gln Tyr Phe Ile Ser Arg Asp Trp Lys Leu Asp
545 550 555 560
Pro Val Leu Tyr Arg Lys Cys Gln Gly Asp Ala Ser Arg Leu Cys His
565 570 575
Thr His Gly Trp Asn Glu Thr Ser Glu Phe Met Pro Gln Gly Ala Val
580 585 590
Phe Ser Cys Leu Tyr Arg His Ala Tyr Arg Thr Glu Glu Gln Gly Arg
595 600 605
Arg Leu Leu Asp Pro Ala Leu Gln Asp Lys Cys Leu Ile Asp Leu Gly
610 615 620
Lys Trp Cys Ser Glu Lys Thr Glu Thr Gly Gln Glu Leu Glu Cys Leu
625 630 635 640
Ser Arg Glu Cys Arg Ala Glu Val Gln Arg Ile Leu His Gln Arg Ala
645 650 655
Met Asp Val Lys Gln Asp His Leu Asp Asp Leu Val Val Glu Cys Arg
660 665 670
Asp Ile Val Gly Asn Leu Thr Glu Leu Glu Ser Glu Asp Ile Gln Ile
675 680 685
Glu Ala Leu Leu Met Arg Ala Cys Glu Pro Ile Ile Gln Asn Phe Cys

690	695	700
His Asp Val Ala Asp Asn Gln Ile Asp Ser Gly Asp Leu Met Glu Cys		
705	710	715
Leu Ile Gln Asn Lys His Gln Lys Asp Met Asn Glu Lys Cys Ala Ile		720
	725	730
Gly Val Thr His Phe Gln Leu Val Gln Met Lys Asp Phe Arg Phe Ser		735
	740	745
Tyr Lys Phe Lys Met Ala Cys Lys Glu Asp Val Leu Lys Leu Cys Pro		750
	755	760
Asn Ile Lys Lys Lys Val Asp Val Val Ile Cys Leu Ser Thr Thr Val		765
	770	775
Arg Asn Asp Thr Leu Gln Glu Ala Lys Glu His Arg Val Ser Leu Lys		780
785	790	795
Cys Arg Arg Gln Leu Arg Val Glu Glu Leu Glu Met Thr Glu Asp Ile		800
	805	810
Arg Leu Glu Pro Asp Leu Tyr Glu Ala Cys Lys Ser Asp Ile Lys Asn		815
	820	825
Phe Cys Ser Ala Val Gln Tyr Gly Asn Ala Gln Ile Ile Glu Cys Leu		830
	835	840
Lys Glu Asn Lys Lys Gln Leu Ser Thr Arg Cys His Gln Lys Val Phe		845
	850	855
Lys Leu Gln Glu Thr Glu Met Met Asp Pro Glu Leu Asp Tyr Thr Leu		860
865	870	875
Met Arg Val Cys Lys Gln Met Ile Lys Arg Phe Cys Pro Glu Ala Asp		880
	885	890
Ser Lys Thr Met Leu Gln Cys Leu Lys Gln Asn Lys Asn Ser Glu Leu		895
	900	905
Met Asp Pro Lys Cys Lys Gln Met Ile Thr Lys Arg Gln Ile Thr Gln		910
	915	920
Asn Thr Asp Tyr Arg Leu Asn Pro Met Leu Arg Lys Ala Cys Lys Ala		925
	930	935
Asp Ile Pro Lys Phe Cys His Gly Ile Leu Thr Lys Ala Lys Asp Asp		940
945	950	955
Ser Glu Leu Glu Gly Gln Val Ile Ser Cys Leu Lys Leu Arg Tyr Ala		960
	965	970
Asp Gln Arg Leu Ser Ser Asp Cys Glu Asp Gln Ile Arg Ile Ile Ile		975
	980	985
Gln Glu Ser Ala Leu Asp Tyr Arg Leu Asp Pro Gln Leu Gln Leu His		990
	995	1000
Cys Ser Asp Glu Ile Ser Ser Leu Cys Ala Glu Glu Ala Ala Ala Gln		1005
	1010	1015
Glu Gln Thr Gly Gln Val Glu Glu Cys Leu Lys Val Asn Leu Leu Lys		1020
1025	1030	1035
Ile Lys Thr Glu Leu Cys Lys Lys Glu Val Leu Asn Met Leu Lys Glu		1040
	1045	1050
Ser Lys Ala Asp Ile Phe Val Asp Pro Val Leu His Thr Ala Cys Ala		1055
	1060	1065
Leu Asp Ile Lys His His Cys Ala Ala Ile Thr Pro Gly Arg Gly Arg		1070
	1075	1080
Gln Met Ser Cys Leu Met Glu Ala Leu Glu Asp Lys Arg Val Arg Leu		1085
	1090	1095
Gln Pro Glu Cys Lys Lys Arg Leu Asn Asp Arg Ile Glu Met Trp Ser		1100
1105	1110	1115
Tyr Ala Ala Lys Val Ala Pro Ala Asp Gly Phe Ser Asp Leu Ala Met		1120
	1125	1130
Gln Val Met Thr Ser Pro Ser Lys Asn Tyr Ile Leu Ser Val Ile Ser		1135
	1140	1145
		1150

Gly Ser Ile Cys Ile Leu Phe Leu Ile Gly Leu Met Cys Gly Arg Ile
1155 1160 1165
Thr Lys Arg Val Thr Arg Glu Leu Lys Asp Arg
1170 1175

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<220>
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<220>
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tat ggc atg cac tgg gtc cgc cag gct cca ggc aag ggg ctg gag tgg   96
Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
             20             25             30

gtg gca gtt ata tca tat gat gga agt aat aaa tac tat gca gac tcc   144
Val Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser
             35             40             45

gtg aag ggc cga ttc acc atc tcc aga gac aat tcc aag aac acg ctg   192
Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu
             50             55             60

tat ctg caa atg aac agc ctg aga gct gag gac acg gct gtg tat tac   240
Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr
             65             70             75             80

tgt gcg agg tcg act acg agg tct tat cct cta tac ggt atg gac gtt   288
Cys Ala Arg Ser Thr Thr Arg Ser Tyr Pro Leu Tyr Gly Met Asp Val
             85             90             95

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Trp Gly Gln Gly Asn Pro Val Thr	
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gga cag acg gcc agt att acc tgt ggg gga aat aac att gga agt aaa	96
Gly Gln Thr Ala Ser Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys	
20 25 30	
agt gtg cac tgg tac cat cag aag cca ggc cag gcc cct gtg ctg gtc	144
Ser Val His Trp Tyr His Gln Lys Pro Gly Gln Ala Pro Val Leu Val	
35 40 45	
gtc tat gat gat agc gac cgg ccc tca ggg atc cct gag cga ttc tct	192
Val Tyr Asp Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser	
50 55 60	
ggc tcc aac tct ggg aac acg gcc acc ctg acc atc acc agg gtc gaa	240
Gly Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Thr Arg Val Glu	
65 70 75 80	
gcc ggg gat gag gcc gac tat tac tgt cag gtg tgg gat agt agt agt	288
Ala Gly Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser	
85 90 95	
gat ctc aat tgg gtg ttc ggc gga agg acc caa gct gac cgt cct acg	336
Asp Leu Asn Trp Val Phe Gly Gly Arg Thr Gln Ala Asp Arg Pro Thr	
100 105 110	
tca gcc caa ggc tgc ccc tcc ggt cac tct gtt ccc cgc ccc cct ctg	384
Ser Ala Gln Gly Cys Pro Ser Gly His Ser Val Pro Arg Pro Pro Leu	
115 120 125	
aag agc ttc aag ctt	399
Lys Ser Phe Lys Leu	
130	

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 Val Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser
 35 40 45
 Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu
 50 55 60
 Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr
 65 70 75 80
 Cys Ala Arg Ser Thr Thr Arg Ser Tyr Pro Leu Tyr Gly Met Asp Val
 85 90 95
 Trp Gly Gln Gly Asn Pro Val Thr
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 <211> 133
 <212> PRT
 <213> Homo sapiens

<400> 29
 Val Thr Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro
 1 5 10 15
 Gly Gln Thr Ala Ser Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys
 20 25 30
 Ser Val His Trp Tyr His Gln Lys Pro Gly Gln Ala Pro Val Leu Val
 35 40 45
 Val Tyr Asp Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser
 50 55 60
 Gly Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Thr Arg Val Glu
 65 70 75 80
 Ala Gly Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser
 85 90 95
 Asp Leu Asn Trp Val Phe Gly Gly Arg Thr Gln Ala Asp Arg Pro Thr
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 Ser Ala Gln Gly Cys Pro Ser Gly His Ser Val Pro Arg Pro Pro Leu
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 Lys Ser Phe Lys Leu
 130

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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 30
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22